

AMENDMENTS TO THE SPECIFICATION

- (1) Please replace the abstract of the present application beginning at page 173, line 2, which starts with "A system is described for maintaining synchrony of operation ..." with the following amended paragraph:

A system ~~is described for maintaining~~ maintains synchrony of operations among ~~a plurality of~~ devices that have independent clocking arrangements. The system includes a task distribution device that distributes tasks to a synchrony group ~~comprising a plurality of devices that are to perform the tasks distributed by the task distribution device in synchrony.~~ The task distribution device distributes each task to the members of the synchrony group over a network. Each task is associated with a time stamp that indicates a time, relative to a clock maintained by the task distribution device, at which the members of the synchrony group are to execute the task. Each member of the synchrony group periodically obtains ~~from the task distribution device~~ an indication of the current time indicated by its clock, determines a time differential between the task distribution device's clock and its respective clock and determines ~~therefrom~~ a time at which, according to its respective clock, the time stamp indicates that it is to execute the task.

- (2) Please replace the paragraph beginning at page 5, line 2, which starts with "FIG. 1 depicts an illustrative network audio system 10 ..." with the following amended paragraph:

FIG. 1 depicts an illustrative network audio system 10 constructed in accordance with the invention. ~~Systems may also include networked visual and/or audiovisual systems.~~ With reference to FIG. 1, the network audio system 10 includes a plurality of zone players 11(1) through 11(N) (generally identified by reference numeral 11(n)) interconnected by a local network 12, all of which operate under control of one or more

user interface modules generally identified by reference numeral 13. One or more of the zone players 11(n) may also be connected to one or more audio information sources, which will generally be identified herein by reference numeral 14(n)(s), and/or one or more audio reproduction devices, which will generally be identified by reference numeral 15(n)(r). ~~Audio reproduction devices may include one or more external amplifiers and/or speakers or other devices that change electrical signals into sound loud enough to be heard at a distance, and may or may not also include one or more cathode ray tubes or similar devices for any visual components.~~ In the reference numeral 14(n)(s), index "n" refers to the index "n" of the zone player 11(n) to which the audio information source is connected, and the index "s" ($s=1, \dots, S_n$) refers to the "s-th" audio information source connected to that "n-th" zone player 11(n). Thus, if, for example, a zone player 11(n) is connected to four audio information sources 14(n)(1) through 14(n)(4), the audio information sources may be generally identified by reference numeral 14(n)(s), with $S_n=4$. It will be appreciated that the number of audio information sources S_n may vary as among the various zone players 11(n), and some zone players may not have any audio information sources connected thereto. Similarly, in the reference numeral 15(n)(r), index "n" refers to the index "n" of the zone player 11(n) to which the audio reproduction device is connected, and the index "r" ($r=1, \dots, R_n$) refers to the "r-th" audio information source connected to that "n-th" zone player 11(n). In addition to the audio information sources 14(n)(s), the network audio system 10 may include one or more audio information sources 16(1) through 16(M) connected through appropriate network interface devices (not separately shown) to the local network 12. Furthermore, the local network may include one or more network interface devices (also not separately shown) that are configured to connect the local network 12 to other networks, including a wide area network such as the Internet, the public switched telephony network (PSTN) or other networks as will be apparent to those skilled in the art, over which connections to audio information sources may be established.

(3) Please replace the paragraph beginning at page 6, line 1, which starts with "The zone players 11(n) associated with system 10 ..." with the following amended paragraph:

The zone players 11(n) associated with system 10 may be distributed throughout an establishment such as residence, an office complex, a hotel, a conference hall, an amphitheater or auditorium, or other types of establishments as will be apparent to those skilled in the art or the like. For example, if the zone players 11(n) and their associated audio information source(s) and/or audio reproduction device(s) are distributed throughout a residence, one, such as zone player 11(1) and its associated audio information source(s) and audio reproduction device(s) may be located in a living room, another may be located in a kitchen, another may be located in a dining room, and yet others may be located in respective bedrooms, to selectively provide entertainment in those rooms. On the other hand, if the zone players 11(n) and their associated audio information source(s) and/or audio reproduction device(s) are distributed throughout an office complex, one may, for example, be provided in each office to selectively provide entertainment to the employees in the respective offices. Similarly, if the zone players 11(n) and associated audio information source(s) and/or audio reproduction device(s) are used in a hotel, they may be distributed throughout the rooms to provide entertainment to the guests. Similar arrangements may be used with zone players 11(n) and associated audio information source(s) and/or audio reproduction device(s) used in an amphitheater or auditorium. Other arrangements in other types of environments[[,]] ~~such as in motorized vehicles, airplanes, jets, boats, yachts and ships~~ will be apparent to those skilled in the art. In each case, the zone players 11(n) can be used to selectively provide entertainment in the respective locations, as will be described below.

(4) Please replace the paragraph beginning at page 8, line 9, which starts with “In the following, the term ‘synchrony group’ will be used to refer to a set of one or more zone players ...” with the following amended paragraph:

In the following, ~~although~~ the term “synchrony group” will be used to refer to a set of one or more zone players that are to play the same audio program synchronously ~~[[,]] the term applies equally to a set of one or more zone players that are to play the same visual and/or audiovisual program synchronously.~~ Thus, in the above example, zone players 11(1) and 11(2) comprise one synchrony group, zone player 11(3) comprises a second synchrony group, zone players 11(4) and 11(5) comprise a third synchrony group, and zone player 11(6) comprises yet a fourth synchrony group. Thus, while zone players 11(1) and 11(2) are playing the same audio program, they will play the audio program synchronously. Similarly, while zone players 11(4) and 11(5) are playing the same audio program, they will play the audio program synchronously. On the other hand, zone players that are playing different audio programs may do so with unrelated timings. That is, for example, the timing with which zone players 11(1) and 11(2) play their audio program may have no relationship to the timing with which zone player 11(3), zone players 11(4) and 11(5), and zone player 11(6) play their audio programs. It will be appreciated that, since “synchrony group” is used to refer to sets of zone players that are playing the same audio program synchronously, zone player 11(1) will not be part of zone player 11(6)’s synchrony group, even though zone player 11(1) is providing the audio information for the audio program to zone player 11(6).

(5) Please replace the paragraph beginning at page 11, line 8, which starts with "Operations performed by the various devices associated ..." with the following amended paragraph:

Operations performed by the various devices associated with a synchrony group will be described in connection with FIG. 2, which schematically depicts a functional block diagram of a an exemplary synchrony group in the network audio system 10 described above in connection with the exemplary embodiment shown in ~~with~~ FIG. 1. With reference to FIG. 2, an exemplary synchrony group 20 includes a master device 21 and zero or more slave devices 22(1) through 22(G) (generally identified by reference numeral 22(g)), all of which synchronously play an audio, ~~visual, and/or audiovisual~~ program provided by an ~~audio~~ information channel device, such as audio information channel device 23. Information channel devices may comprise other task sources and task source devices of audio, visual and/or audiovisual information. Each of the master device 21, slave devices 22(g) and audio information channel device 23 may utilize[[s]] a zone player ~~11(n)~~ such as the illustrative zone player 11(n) depicted in the exemplary embodiment shown in FIG. 1, although it will be clear from the description below that a zone player may be utilized ~~both~~ for the audio, ~~visual and/or audiovisual~~ information channel device for the synchrony group 20, and the master device 21 or a slave device 22(g) of the synchrony group 20. As will be described below in more detail in connection with an exemplary embodiment, the audio information channel device 23 obtains the audio information for the audio program from an audio information source, adds playback timing information, and transmits the combined audio and playback timing information to the master device 21 and slave devices 22(g) over the network 12 for playback. The playback timing information that is provided with the audio information, together with clock timing information provided by the audio information channel device 23 to the various devices 21 and 22(g) as will be described below, enables the master device 21 and slave devices 22(g) of the synchrony group 20 to play the audio information simultaneously.

(6) Please replace the paragraph beginning at page 28, line 14, which starts with "In one particular embodiment, the audio information source interface 30 ..." with the following amended paragraph:

In one particular embodiment, the audio information source interface 30 divides the audio information associated with an audio work into a series of frames, with each frame comprising digital audio information for a predetermined period of time. As used herein with respect to digital audio information (as may also be the case with other embodiments encompassing visual and/or audio-visual information), an audio track may comprise any unit of audio information that is to be played without interruption. On the other hand, an audio program may comprise a series of one or more audio tracks that are to be played in succession. It will be appreciated that the tracks comprising the audio program may also be played without interruption, or alternatively playback between tracks may be interrupted by a selected time interval. FIG. 4 schematically depicts an illustrative framing strategy used in connection with one exemplary embodiment of the invention for a digital audio stream comprising an audio work. More specifically, the exemplary embodiment shown in FIG. 4 depicts a framed digital audio stream 50 comprising a sequence of frames 51 (1) through 51(F) (generally identified by reference numeral 51(f)). Each frame 51(f), in turn, comprises a series of audio samples 52(f)(1) through 52(f)(S) (generally identified by reference numeral 52(f)(s)) of the audio track. Preferably all of the frames will have the same number "S" of audio samples, although it will be appreciated from the following that is primarily for convenience. On the other hand, it will be appreciated that, the number of audio samples may differ from "S"; this may particularly be the case if the frame 51(f) contains the last audio samples for the digital audio stream for a particular audio work. In that case, the last frame 51(F) will preferably contain samples 52(F)(1) through 52(F)(x), where "x" is less than "S." Generally, it is desirable that the number of samples be consistent among all frames 51(f), and in that case padding, which will not be played, can be added to the last frame 51(F).